Wireless Application for Complex Wound Management

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This project was to develop a web based wireless system to be used by community care nurses. Wound care constitutes approximately one half of home health care nursing visits. The system was implemented with a digital camera and a handheld computer with a wireless connection to a web based server. A database was used to control access to the clinical cases and to serve as a data repository. When new images were uploaded to the server a wound expert was notified via pager. The images and data could be viewed from any computer with an internet connection.

The specific task was to improve the management of complex wounds in the home care environment. Other goals were to reduce the overall costs of complex wound management, enhance efficiency and quality of wound care management.

Currently complex wound management has been noted to be costly and wound healing time is shortened if the wound is followed by a wound care consultant. If a patient's wound requires assessment at a tertiary care clinic it can take up to three weeks for the wound to be assessed. While waiting for the wound to be assessed home care nurses find that the wounds continue to deteriorate, increasing the length of time the nurse must be involved, ultimately decreasing the quality of care.

Pixalere is an internet based system. Users can enter data and images into Pixalere at any location where they have access to a computer linked to the internet. Notebook or handheld computers with wireless connections may be used. The data input screens are designed for easy collection of a standard data set for wound management. Data can then be immediately uploaded to a secure website. Any authorized user can then access the information via the secure internet site from any computer that is linked the internet.

Once the information is in the secure internet site wound care consultants and/or physicians can be paged and can then assess the patient data and images. Then they can provide treatment recommendations by adding their recommendations to the designated area on the web page. The turn around time can be such that the recommendation is received at the point of care during that same visit.

Image quality was assessed as very adequate by wound experts and a dermatologist, expert in wound care. The systems is being further developed to provide a database to allow for detailed analysis of different approaches to wound management.

Ablaza and Fisher[1] describe how wounds followed by clinical wound specialists increased the healing rates of wound as compared to those not followed by a clinical wound specialist. Visco et al[2] found that telehealth improved all aspects of complex wound treatment by increasing collaboration and coordination of treatment.

References

1 Ablaza, V.J., & Fisher, J. (1999). Wound care via telemedicine: The wave of the future. Available from: URL: http://www.rubic.com/articles/article1.html

2 Visco, D.C., Shalley, T., Wren, S.J., et al (2001). Use of telehealth for chronic wound care: A case Study. Journal of Wound, Ostomy, and Continence Nurses, 28, 89-95.